

In the Claims:

Please cancel claims 6, 13, 14 and 15.

Please amend claims 1 and 7 as set forth below in the "Listing of Claims".

LISTING OF CLAIMS

Claim 1 (Currently Amended): A method of etching, by a plasma of an etching gas in a processing vessel, a lower layer film of an organic material formed on a substrate, using an upper layer film of an Si-containing organic material as a mask, wherein

a mixed gas containing an NH_3 gas and an O_2 gas is supplied into the processing vessel as the etching gas,

a CD shift value of etching is controlled by adjusting a flow ratio of the O_2 gas to the NH_3 gas,

the plasma is formed between a pair of opposed electrodes disposed in the processing vessel, and

a residence time represented by V/S takes a value from 20 to 60 msec, where V (m^3) represents an effective processing space volume as a product of an area of the substrate and a distance between the electrodes, and S (m^3/sec) represents a gas exhaust velocity from the processing vessel;

wherein the etching method is carried out by a capacitively coupled plasma etching system, which forms a high-frequency electric field between a pair of opposed electrodes disposed in the processing vessel to generate the plasma; and

further wherein the distance between the electrodes is such that a distance between a first of said electrodes and a wafer disposed on a second of said electrodes is from 30 to 90 mm.

Claim 2 (Original): The etching method according to claim 1, wherein a pressure in the processing vessel is not less than 2.7 Pa and less than 13.3 Pa.

Claim 3 (Previously Presented): The etching method according to claim 1, wherein a pressure in the processing vessel is not less than 6.7 Pa and less than 13.3 Pa.

Claim 4 (Previously Presented): The etching method according to claim 1, wherein a temperature of a support member supporting the substrate in the processing vessel is from 0 to 20°C.

Claim 5 (Original): The etching method according to claim 1, wherein the substrate has a surface layer to be etched with the lower layer film used as a mask, the surface layer being formed under the lower layer film.

Claim 6 (Canceled)

Claim 7 (Currently Amended): A method of etching, by a plasma of an etching gas in a processing vessel, a lower layer film of an organic material formed on a substrate, using an upper layer film of an Si-containing organic material as a mask, wherein

a mixed gas containing an NH_3 gas and an O_2 gas is supplied into the processing vessel as the etching gas,

a flow ratio of the O_2 gas to the NH_3 gas is from 0.5 to 20%,

the plasma is formed between a pair of opposed electrodes disposed in the processing vessel, and

a residence time represented by V/S takes a value from 20 to 60 msec, where V (m^3) represents an effective processing space volume as a product of an area of the substrate and a distance between the electrodes, and S (m^3/sec) represents a gas exhaust velocity from the processing vessel;

wherein the etching method is carried out by a capacitively coupled plasma etching system, which forms a high-frequency electric field between a pair of opposed electrodes disposed in the processing vessel to generate the plasma; and

further wherein the distance between the electrodes is such that a distance between a first of said electrodes and a wafer disposed on a second of said electrodes is from 30 to 90 mm.

Claim 8 (Original): The etching method according to claim 7, wherein the flow ratio of the O₂ gas to the NH₃ gas is from 5 to 10%.

Claim 9 (Original): The etching method according to claim 7, wherein a pressure in the processing vessel is not less than 2.7 Pa and less than 13.3 Pa.

Claim 10 (Previously Presented): The etching method according to claim 7, wherein a pressure in the processing vessel is not less than 6.7 Pa and less than 13.3 Pa.

Claim 11 (Previously Presented): The etching method according to claim 7, wherein a temperature of a support member supporting the substrate in the processing vessel is from 0 to 20°C.

Claim 12 (Original): The etching method according to claim 7, wherein the substrate has a surface layer to be etched with the lower layer film used as a mask, the surface layer being formed under the lower layer film.

Claims 13-15 (Canceled)